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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/509,933	10/01/2004	Frederik Visser	PHNL020274US	4325

7590 06/14/2005  
Thomas M Lundin  
Philips Intellectual Property & Standards  
595 Miner Road  
Cleveland, OH 44143

EXAMINER

FETZNER, TIFFANY A

ART UNIT	PAPER NUMBER
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2859

DATE MAILED: 06/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)	
	10/509,933	VISSER ET AL.	
	Examiner	Art Unit	
	Tiffany A. Fetzner	2859	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 01 October 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 October 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 10/01/2004.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Priority***

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

### ***Information Disclosure Statement***

2. The information disclosure statement (IDS) submitted on 10/01/2004 is in compliance with the provisions of 37 CFR 1.97. Accordingly, the examiner has considered the information disclosure statement. The initialed and dated IDS is attached to this office action.

### ***Drawings / Specification***

3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description:

**A)** In figure 2 components s, W1, W2, and 14 are not described in the original description of Figure 2. [See page 6 line 4 through page 7 line 5. Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement-drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the examiner does not accept the changes, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Claim Objections***

4. **Claims 6, 8, and 9** objected to because of the following informalities:

**A)** **Claim 6** "wherein said increasing with distance to an edge of the spatial region of the basis dataset concerned is more strongly [??] as there is less overlap between the adjacent spatial regions", is objected to because is not a comprehensive claim

limitation. The wording is grammatically unclear. The phrase in line 2 of claim 6 specifically the phrase "is more strongly as" does not make sense. There seems to be a noun or some feature missing at the point in which the examiner has inserted the "?"s.

**B)** In **Claim 8**, delete the "a" after "the basis datasets include [a] data values" so that the grammar is correct.

**C)** **Claim 9** is objected to because of an improper dependency, **claim 9 cannot depend from itself**. The examiner is interpreting **claim 9** as depending from **claim 8** due to its antecedence concerns, so art can be applied, but the dependency must be corrected. Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. **Claim 6** is rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential elements, such omission amounting to a gap between the elements. See MPEP § 2172.01. The omitted elements are: whatever the missing word is in **claim 6**, the examiner does not know what parameter applicant is referring to. See the objection above.

7. In view of the rejection of **claim 6** under 35 USC § 112, no art has been developed for these claims because improper speculation as to the scope and meaning of the claims would be required by the examiner. See *In re Steele* 134 USPQ 292.

***Claim Rejections - 35 USC § 102***

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

9. **Claims 1-5, 7-9** are rejected under **35 U.S.C. 102(e)** as being anticipated by **Britain** US Patent application publication **2002/0140423 A1** published October 3<sup>rd</sup> 2002, filed October 5<sup>th</sup> 2001. The effective US priority date of this reference is October 5<sup>th</sup> 2001.

10. **Claims 1-5, 7-9** are rejected under **35 U.S.C. 102(e)** as being anticipated by **Britain** US Patent **6,794,869 B2** issued September 21<sup>st</sup> 2004, filed October 5<sup>th</sup> 2001; which corresponds to **Britain** US Patent application publication 2002/0140423 A1 published October 3<sup>rd</sup> 2002, filed October 5<sup>th</sup> 2001. The effective US priority date of this reference is October 5<sup>th</sup> 2001. [Applicant note **all citations are from the Britain US Patent application publication 2002/0140423 A1**, since the same teachings are found in both references for the sake of brevity.]

11. With respect to **Claim 1**, **Britain** teaches and shows "A method of data processing" [See figures 5, 10] "to form a compound object" (i.e. a final MRI image) "data set from a plurality of basis datasets" (i.e. the Kz, Ky and Kx datasets, which are basis datasets from which the final image is constructed.) [See the **Britain** abstract, page 1 paragraph [0010] through page 10 paragraph [0077]]. **Britain** teaches and shows "the basis datasets" (i.e. the Kz, Ky and Kx datasets) "assigning data values to spatial positions in an at least three-dimensional space", [See figures 5, 10, 2, 3, 8; page 2 paragraph [0012] 2<sup>nd</sup> to last sentence, page 2 paragraph [0013] 3<sup>rd</sup> to last sentence, page 3 paragraphs [0034], [0035]; page 4 paragraph [0042] through page 5 paragraph [0043]; page 6 paragraph [0049] where "gridding" of the Kz, Ky, and Kx datasets necessarily "assigns spatial positions in an at least three-dimensional space", before the Fourier Transformation to produce the final resulting image. See also page 6 paragraph [0050] through page 10 paragraph [0077], where numerous ways of aligning, regridding, and matching of positions before Fourier transformation, and/or during reconstruction of the final image.] **Britain** teaches and shows "the basis datasets" (i.e. the Kz, Ky and Kx datasets) "being associated with mutually overlapping regions" [See page 6 paragraph [0051], page 8 paragraph [0067], page 9 paragraph [0075] and figures 2, 3, and 8 which show how the data regions assigned can mutually overlap.] "the method comprising the step of deriving compound data values" (i.e. interpolating

the acquired data as necessary to improve the accuracy of the alignment, page 7 paragraph [0059]) "for spatial positions in the overlapping regions from data values of respective basis datasets" (i.e. the Kz, Ky and Kx datasets) [See page 6 paragraph [0051], pages 8-9 paragraphs [0067], [0071], and [0075].

12. With respect to **Claim 2**, **Britain** teaches and shows "the compound data values are calculated by interpolation between data values of the basis datasets and for corresponding positions in the overlapping regions." [See page 6 paragraph [0051], page 7 paragraph [0059], pages 8-9 paragraphs [0067], [0071], and [0075] and figures 2, 3, and 8 which show how the data regions assigned can mutually overlap.] The same reasons for rejection, that apply to **claim 1** also apply to **claim 2** and need not be reiterated.

13. With respect to **Claim 3**, **Britain** teaches "the calculation of compound data values involves a weighted interpolation", because the images produced are weighted based on the type of 3D or 2D image desired, and interpolating the acquired Kz, Ky and Kx datasets as necessary to improve the alignment of anatomic locations, the correction of non-linearities and have the largest impact on image contrast." [See page 7 paragraph [0057] through page 10 paragraph [0077].] The same reasons for rejection, that apply to **claims 1, 2** also apply to **claim 3** and need not be reiterated.

14. With respect to **Claim 4**, **Britain** teaches and shows "that the weights for data values of individual basis datasets" (i.e. the Kz, Ky and Kx datasets) "are associated with their spatial positions in the respective spatial regions of said basis datasets" [See figures 5, 10, 2, 3, and 8] "and for respective basis datasets" [See page 4 paragraph [0043] through page 9 paragraph [0075] where all of the weighting parameters may be varied as desired for each k-space subset (i.e. the Kz, Ky and Kx datasets), and any k-space trajectory pattern may be used, to compile data from different positions, to their anatomically matched locations.] **Britain** also teaches and shows that "the weights are non-decreasing" (i.e. the weighing is constant or equal) "with distance to an edge of the spatial region of the basis dataset concerned." [See page 4 paragraphs [0036], [0037]; page 7 paragraph [0065] through page 8 paragraph [0067]; page 9 paragraph [0072] where the ability to have equal subsets as one option of implementation is taught.] The

same reasons for rejection, that apply to **claims 1, 2, 3** also apply to **claim 4** and need not be reiterated.

15. With respect to **Claim 5**, **Britain** teaches and shows at least one embodiment in which "the respective basis datasets have neighboring spatial regions and said increasing of the weights with distance to an edge of the spatial region of the basis dataset concerned is dependent on the overlap between the neighboring spatial regions." [See page 6 paragraphs [0050], [0051], [0052] pages 7-8 paragraph [0059] through [0066], pages 8-9 paragraphs [0067], [0071], and [0075] and figures 2, 3, and 8 which show how the neighboring data regions assigned can mutually overlap.] The same reasons for rejection, that apply to **claims 1, 2, 3, 4**, also apply to **claim 5** and need not be reiterated.

16. With respect to **Claim 7**, **Britain** teaches and shows that "individual basis datasets are reconstructed from magnetic resonance signals." [See abstract, figure 1, page 1 paragraph [0002] through page 2 paragraph [0014]] The same reasons for rejection, that apply to **claim 1**, also apply to **claim 7** and need not be reiterated.

17. With respect to **Claim 8**, **Britain** teaches and shows that "the basis datasets include **[a]** data values that are encoded in three independent spatial directions of a multitude of two-dimensionally encoded data subsets." [See the entire **Britain** reference, as this limitation is a main concept of the entire reference. See also the abstract, figures 5, 10, and 11.] The same reasons for rejection, obviousness, and motivation to combine, that apply to **claim 1**, also apply to **claim 9** and need not be reiterated.

18. With respect to **Claim 9**, **Britain** teaches and shows "A method as claimed in **Britain [9] 8**, wherein for individual basis data sets, sets of magnetic resonance signals are successively acquired for the respective positions in one spatial encoding direction or for the respective two-dimensional data subsets and where the order of acquisition runs from the centre towards the edge of the spatial region of the basis dataset concerned." [See figure 1, abstract, page 1 paragraph [0009] through page 2 paragraph [0014] and the k-space center out teachings of page 6 paragraph [0049], [0050], page 7

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paragraphs [0061] through [0065].] The same reasons for rejection, which apply to **claims 1, 8** also apply to **claim 9** and need not be reiterated.

#### **Prior art of Record**

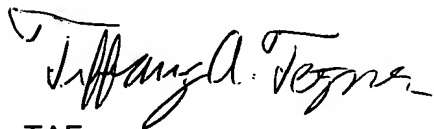
19. The **prior art made of record** and not relied upon is considered pertinent to applicant's disclosure. [See the **entire list** of references on the attached examiner's notice of references cited.]

- A) **Liu** US patent 6,043,654 Issued March 28<sup>th</sup> 2000.
- B) **Parker et al.**, US patent 5,167,232 issued December 1<sup>st</sup> 1992.
- C) All of the other **Britain** and **Britain et al.**, references listed of the 892 which are connected to the cited **Britain** reference above.

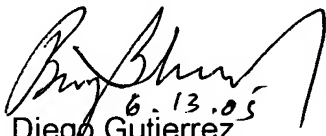
#### **Conclusion**

20. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tiffany Fetzner whose telephone number is: (571) 272-2241. The examiner can normally be reached on Monday-Thursday from 7:00am to 4:30pm., and on alternate Friday's from 7:00am to 3:30pm.

21. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Diego Gutierrez, can be reached at (571) 272-2245. The **only official fax phone number** for the organization where this application or proceeding is assigned is **(703) 872-9306**.



TAF  
June 12, 2005



Diego Gutierrez  
Supervisory Patent Examiner  
Technology Center 2800